

**YEAR 10**

Straight Line Graphs

Every straight line can be written as $y = mx + c$, where m is the gradient and c is where the line crosses the y -axis. Rearrange first, then read off.

Name: _____

Date: _____

Score: _____

Section A · Gradient and intercept

Read them straight from $y = mx + c$.

① For $y = 4x - 7$, state the gradient.

② For $y = 4x - 7$, state the y -intercept.

③ For $y = 2 - 5x$, state the gradient.

④ For $y = 2 - 5x$, state the y -intercept.

⑤ For $y = \frac{1}{2}x + 3$, state the gradient.

⑥ For $y = \frac{1}{2}x + 3$, state the y -intercept.

Section B · Rearranging first

Get y on its own before you read the gradient.

① Rearrange $2y = 6x + 10$ into the form $y = mx + c$ and state the gradient.

② Rearrange $x + y = 7$ into the form $y = mx + c$ and state the gradient.

3 Rearrange $3x + 2y = 12$ into the form $y = mx + c$ and state the gradient.

4 Rearrange $4y - 8x = 20$ into the form $y = mx + c$ and state the gradient.

Section C • Gradient from two points

Gradient = change in $y \div$ change in x .

1 Find the gradient of the line through (1, 3) and (4, 12).

2 Find the gradient of the line through (-2, 5) and (2, -3).

3 Find the gradient of the line through (0, 4) and (5, 4).

4 Find the gradient of the line through (1, 2) and (5, 4).

Section D • Finding equations

Find the gradient first, then substitute a point to find c .

1 Find the equation of the line with gradient 2 passing through (0, -3).

2 Find the equation of the line through (1, 5) and (3, 11).

3 Find the equation of the line parallel to $y = 5x - 1$ that passes through (0, 4).

4 A line is perpendicular to $y = 2x + 1$. State its gradient.

5 Find the midpoint of (2, 3) and (8, 11).

6 Does the point (3, 10) lie on the line $y = 3x + 1$?

